

## CLAIMS:

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1. Wireless network system, comprising: a first access point for providing a first communication channel to a first terminal; and a second access point for providing a second communication channel to a second terminal; wherein the first access point is adapted to build up a third communication channel to the second access point to  
10 coordinate a setting of the first and second communication channels.
2. Wireless network system according to claim 1, wherein the first access point is adapted to perform a detection for the second access point; and wherein the first access point is adapted to establish the third connection to the second access point when  
15 the second access point is detected via at least one of a core network and a wireless channel.
3. Wireless network system according to claim 1, wherein the first and second communication channels are wireless channels; wherein the first access point is  
20 adapted to determine whether there is a first free channel and a second free channel; and wherein, in case there are first and second free channels, the first access point is adapted to control a setting of the first and second communication channels on the basis of the first and second free channels.
- 25 4. Wireless network system according to claim 3, wherein, in case there are no first and second free channels, the first access point is adapted to determine a first interference and channel usage map; wherein, in case there are no first and second free channels, the first access point is adapted to request a second interference and channel usage map from the second access point; wherein the first access point is adapted to  
30 determine an optimized channel lay-out on the basis of the first and second interference and channel usage maps; and wherein the first access point is adapted to control the

setting of the first and second communication channels on the basis of the optimized lay-out.

- 5 5. The wireless network according to claim 4, wherein a plurality of third access points is assigned to the first access point for coordinating communication channels to associated terminals; and wherein a plurality of fourth access points is assigned to the second access point for coordinating communication channels to associated terminals.
- 10 6. The wireless network of claim 1, wherein the first and second communication channels correspond to first and second frequencies in the ISM band.
- 15 7. Access point device for a wireless network system, wherein the access point device is adapted to: provide a first communication channel to a terminal; and build up a second communication channel to another access point to coordinate a setting of the first communication channel.
- 20 8. Access point device according to claim 7, wherein the access point device is further adapted to: perform a detection for the other access point; and establish a second communication channel to the other access point when the other access point is detected via at least one of a core network and a wireless channel.
- 25 9. Access point device according to claim 7, wherein the first communication channel is a wireless channel; wherein the first access point is further adapted to determine whether there is a first free channel; and wherein, in case there is a first free channel, the first access point is further adapted to control a setting of the first communication channel on the basis of the first free channel.
- 30 10. Access point device according to claim 9, wherein, in case there is no first free channel, the first access point is further adapted to determine a first interference and channel usage map; wherein, in case there is no first free channel, the

first access point is further adapted to request a second interference and channel usage map from the other access point; wherein the first access point is further adapted to determine an optimized channel lay-out on the basis of the first and second interference and channel usage maps; and wherein the first access point is adapted to control the  
5 setting of the first communication channel on the basis of the optimized lay-out.

11. Method of operating an access point of a wireless network, the method comprising the steps of: providing a first communication channel to a terminal; and building up a second communication channel to another access point to coordinate a  
10 setting of the communication channel.

12. The method of claim 11, further comprising the steps of: performing a detection for the other access point; establishing a second communication channel to the other access point when the other access point is detected via at least one of a core  
15 network and a wireless channel; determining whether there is a first free channel; controlling a setting of the first communication channel on the basis of the first free channel in case there is a first free channel; determining a first interference and channel usage map in case there is no first free channel; requesting a second interference and channel usage map from the other access point in case there is no first free channel;  
20 determining an optimized channel lay-out on the basis of the first and second interference and channel usage maps; and controlling the setting of the first communication channel on the basis of the optimized lay-out.